

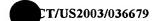
# SEQUENCE LISTING

<110> Zimmerman, et al.

<120> METHODS FOR PREVENTING AND TREATING CANCER METASTASIS AND BONE LOSS
ASSOCIATED WITH CANCER METASTASIS

ADDOCT							_								
<130>	27527	/396	36A												
<150> <151>	US 60, 2002-	•	-												
<160>	8											•			
<170>	Paten	tIn '	vers	ion	3.2										
<210> <211> <212> <213>	1 1855 DNA Homo	sapi	ens												
<220> <221> <222>	CDS (190)	(9	60)												
<220> <221> <222>															
<220> <221> <222>	mat_p (286)														
<400> gagggc	1 tggc c	agtg	aggo	t cg	gccc	:ggg	g aaa	ıgtga	ıaag	tttg	cctg	gg t	ccto	tegge	60
gccaga	gccg c	tata	cgca	it co	cago	gacaç	g cgg	gtgcg	gcc	ctc	gccc	199 S	gegee	cactc	120
cgcago	agcc a	gcga	.gcga	g cg	gagco	gagco	g agg	gcgg	gccg	acgo	gccc	gg o	cggg	jaccca	180
getgee	cgt at Me 1	g ac et Th	c go r Al	g co .a Pr	g gg o Gl 5	y Al	ec go la Al	cc gg la Gl	gg cg Ly Ar	ge to g Cy 10	s Pr	et co co Pi	cc ac	g aca ir Thr	231
tgg ct Trp Le 15	g ggc	tcc Ser	ctg Leu	ctg Leu 20	ttg Leu	ttg Leu	gtc Val	tgt Cys	ctc Leu 25	ctg Leu	gcg Ala	agc Ser	agg Arg	agt Ser 30	279
	c gag r Glu														327
cac ct His Le	g cag u Gln	tct Ser 50	ctg Leu	cag Gln	cgg Arg	ctg Leu	att Ile 55	gac Asp	agt Ser	cag Gln	atg Met	gag Glu 60	acc Thr	tcg Ser	375
	a att n Ile 65														423
gtg tg Val Cy 80	gc tac ys Tyr	ctt Leu	aag Lys	aag Lys	gca Ala 85	ttt Phe	ctc Leu	ctg Leu	gta Val	caa Gln 90	gac Asp	ata Ile	atg Met	gag Glu	471





gac acc atg cgc ttc aga gat aac acc ccc aat gcc atc gcc att gtg Asp Thr Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val 95 100 105 110	519
cag ctg cag gaa ctc tct ttg agg ctg aag agc tgc ttc acc aag gat Gln Leu Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp 115 120 125	567
tat gaa gag cat gac aag gcc tgc gtc cga act ttc tat gag aca cct Tyr Glu Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro 130 135 140	615
ctc cag ttg ctg gag aag gtc aag aat gtc ttt aat gaa aca aag aat Leu Gln Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn 145 150 155	663
ctc ctt gac aag gac tgg aat att ttc agc aag aac tgc aac aac agc Leu Leu Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser 160 165 170	711
ttt gct gaa tgc tcc agc caa ggc cat gag agg cag tcc gag gga tcc Phe Ala Glu Cys Ser Ser Gln Gly His Glu Arg Gln Ser Glu Gly Ser 175 180 185 190	759
tcc agc ccg cag ctc cag gag tct gtc ttc cac ctg ctg gtg ccc agt Ser Ser Pro Gln Leu Gln Glu Ser Val Phe His Leu Leu Val Pro Ser 195 200 205	807
gtc atc ctg gtc ttg ctg gcc gtc gga ggc ctc ttg ttc tac agg tgg Val Ile Leu Val Leu Leu Ala Val Gly Gly Leu Leu Phe Tyr Arg Trp 210 215 220	855
agg cgg cgg agc cat caa gag cct cag aga gcg gat tct ccc ttg gag Arg Arg Ser His Gln Glu Pro Gln Arg Ala Asp Ser Pro Leu Glu 225 230 235	903
caa cca gag ggc agc ccc ctg act cag gat gac aga cag gtg gaa ctg Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg Gln Val Glu Leu 240 245 250	951
cca gtg tag agggaattet aagetggaeg cacagaacag teteteegtg Pro Val 255	1000
ggaggagaca ttatggggcg tccaccacca ccctccctg gccatcctcc tggaatgtgg	1060
tctgccctcc accagagete etgcctgcca ggactggacc agagcageca ggctggggcc	1120
cctctgtctc aacccgcaga cccttgactg aatgagagag gccagaggat gctccccatg	1180
ctgccactat ttattgtgag ccctggaggc tcccatgtgc ttgaggaagg ctggtgagcc	1240
cggctcagga ccctcttccc tcaggggctg caccctcctc tcactccctt ccatgccgga	1300
acccaggcca gggacccacc ggcctgtggt ttgtgggaaa gcagggtgga cgctgaggag	1360
tgaaagaacc ctgcacccag agggcctgcc tggtgccaag gtatcccagc ctggacaggc	1420
atggacctgt ctccagagag aggagcctga agttcgtggg gcgggacagc gtcggcctga	1480
tttcccgtaa aggtgtgcag cctgagagac gggaagagga ggcctctgga cctgctggtc	1540
tgcactgaca gcctgaaggg tctacaccct cggctcacct aagtgccctg tgctggttgc	1600





caggegeaga ggggaggeea geeetgeeet caggaeetge	ctgacctgcc agtgatgcca	1660
agagggggat caagcactgg cetetgeece teeteettee	agcacctgcc agagettete	1720
caggaggcca agcagaggct cccctcatga aggaagccat	tgcactgtga acactgtacc	1780
tgcctgctga acagcctgcc cccgtccatc catgagccag	catccgtccg tcctccactc	1840
tccagcctct cccca		1855

<210> 2 <211> 256

<212> PRT

<213> Homo sapiens

<400> 2

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu 1 5 10 15

Gly Ser Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr . 20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu 35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln 50 . 55 60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr 85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu 100 105 110

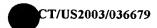
Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu 115 120 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln 130 135 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu 145 150 155 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala 165 170 175





60

Glu Cys Ser Ser Gln Gly His Glu Arg Gln Ser Glu Gly Ser Ser Ser 180 190

Pro Gln Leu Gln Glu Ser Val Phe His Leu Leu Val Pro Ser Val Ile 195 200 205

Leu Val Leu Leu Ala Val Gly Gly Leu Leu Phe Tyr Arg Trp Arg 210 215 220

Arg Ser His Gln Glu Pro Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro 225 230 235 240

Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg Gln Val Glu Leu Pro Val 245 250 255

<210> 3
<211> 2749
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (190)..(1854)

<220>
<221> sig\_peptide
<222> (190)..(285)

<220> <221> mat\_peptide

 $(28\overline{6})..(1851)$ 

<400> 3

<222>

gccagagccg ctctccgcat cccaggacag cggtgcggcc ctcggccggg gcgcccactc 120 cgcagcagcc agcgagcgag cgagcgagcg agggcggccg acgcgcccgg ccgggaccca 180

gagggctggc cagtgaggct cggcccgggg aaagtgaaag tttgcctggg tcctctcggc

tgg ctg ggc tcc ctg ctg ttg ttg gtc tgt ctc ctg gcg agc agg agt
Trp Leu Gly Ser Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser
25 30

atc acc gag gag gtg tcg gag tac tgt agc cac atg att ggg agt gga 327

Ile Thr Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly
35 40 45

Cac ctg cag tct ctg cag ctg att gac agt cag atg gag acc tcg
His Leu Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser

50

60

tgc caa att aca ttt gag ttt gta gac cag gaa cag ttg aaa gat cca
Cys Gln Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro
65 70 75

gtg Val	tgc Cys 80	tac Tyr	ctt Leu	aag Lys	aag Lys	gca Ala 85	ttt Phe	ctc Leu	ctg Leu	gta Val	caa Gln 90	gac Asp	ata Ile	atg Met	gag Glu	47	71
gac Asp 95	acc Thr	atg Met	cgc Arg	ttc Phe	aga Arg 100	gat Asp	aac Asn	acc Thr	ccc Pro	aat Asn 105	gcc Ala	atc Ile	gcc Ala	att Ile	gtg Val 110	51	19
cag Gln	ctg Leu	cag Gln	gaa Glu	ctc Leu 115	tct Ser	ttg Leu	agg Arg	ctg Leu	aag Lys 120	agc Ser	tgc Cys	ttc Phe	acc Thr	aag Lys 125	gat Asp	56	67
tat Tyr	gaa Glu	gag Glu	cat His 130	gac Asp	aag Lys	gcc Ala	tgc Cys	gtc Val 135	cga Arg	act Thr	ttc Phe	tat Tyr	gag Glu 140	aca Thr	cct Pro	61	15
ctc Leu	cag Gln	ttg Leu 145	ctg Leu	gag Glu	aag Lys	gtc Val	aag Lys 150	aat Asn	gtc Val	ttt Phe	aat Asn	gaa Glu 155	aca Thr	aag Lys	aat Asn	. 66	53
ctc Leu	ctt Leu 160	gac Asp	aag Lys	gac Asp	tgg Trp	aat Asn 165	att Ile	ttc Phe	agc Ser	aag Lys	aac Asn 170	tgc Cys	aac Asn	aac Asn	agc Ser	<b>71</b>	L1
ttt Phe 175	gct Ala	gaa Glu	tgc Cys	tcc Ser	agc Ser 180	caa Gln	gat Asp	gtg Val	gtg Val	acc Thr 185	aag Lys	cct Pro	gat Asp	tgc Cys	aac Asn 190	75	59
tgc Cys	ctg Leu	tac Tyr	ccc Pro	aaa Lys 195	gcc Ala	atc Ile	cct Pro	agc Ser	agt Ser 200	gac Asp	ccg Pro	gcc Ala	tct Ser	gtc Val 205	tcc Ser	. 80	)7
cct Pro	cat His	cag Gln	ccc Pro 210	ctc Leu	gcc Ala	ccc Pro	tcc Ser	atg Met 215	gcc Ala	cct Pro	gtg Val	gct Ala	ggc Gly 220	ttg Leu	acc Thr	85	55
tgg Trp	gag Glu	gac Asp 225	tct Ser	gag Glu	gga Gly	act Thr	gag Glu 230	ggc Gly	agc Ser	tcc Ser	ctc Leu	ttg Leu 235	cct Pro	ggt Gly	gag Glu	90	)3
cag Gln	ccc Pro 240	ctg Leu	cac His	aca Thr	gtg Val	gat Asp 245	cca Pro	ggc Gly	agt Ser	gcc Ala	aag Lys 250	cag Gln	cgg Arg	cca Pro	ccc Pro	95	51
agg Arg 255	agc Ser	acc Thr	tgc Cys	cag Gln	agc Ser 260	ttt Phe	gag Glu	ccg Pro	cca Pro	gag Glu 265	acc Thr	cca Pro	gtt Val	gtc Val	aag Lys 270	99	9
gac Asp	agc Ser	acc Thr	atc Ile	ggt Gly 275	ggc Gly	tca Ser	cca Pro	cag Gln	cct Pro 280	cgc Arg	ccc Pro	tct Ser	gtc Val	999 Gly 285	gcc Ala	104	.7
ttc Phe	aac Asn	ccc Pro	999 999 290	atg Met	gag Glu	gat Asp	att Ile	ctt Leu 295	gac Asp	tct Ser	gca Ala	atg Met	ggc Gly 300	act Thr	aat Asn	109	5
tgg Trp	gtc Val	cca Pro 305	gaa Glu	gaa Glu	gcc Ala	tct Ser	gga Gly 310	gag Glu	gcc Ala	agt Ser	gag Glu	att Ile 315	ccc Pro	gta Val	ccc Pro	114	:3
caa Gln	999 Gly 320	aca Thr	gag Glu	ctt Leu	tcc Ser	ccc Pro 325	tcc Ser	agg Arg	cca Pro	gga Gly	939 330	ggc Gly	agc Ser	atg Met	cag Gln	119	1





aca Thr 335	gag Glu	ccc Pro	gcc Ala	aga Arg	ccc Pro 340	agc Ser	aac Asn	ttc Phe	ctc Leu	tca Ser 345	gca Ala	tct Ser	tct Ser	cca Pro	ctc Leu 350	1239
cct Pro	gca Ala	tca Ser	gca Ala	aag Lys 355	GTĀ	caa Gln	cag Gln	ccg Pro	gca Ala 360	gat Asp	gta Val	act Thr	ggt Gly	aca Thr 365	gcc Ala	1287
ttg Leu	ccc Pro	agg Arg	gtg Val 370	ggc Gly	ccc Pro	gtg Val	agg Arg	ccc Pro 375	act Thr	ggc Gly	cag Gln	gac Asp	tgg Trp 380	aat Asn	cac His	1335
acc Thr	ccc Pro	cag Gln 385	aag Lys	aca Thr	gac Asp	cat His	cca Pro 390	tct Ser	gcc Ala	ctg Leu	ctc Leu	aga Arg 395	gac Asp	ccc Pro	ccg Pro	1383
gag Glu	cca Pro 400	ggc Gly	tct Ser	ccc Pro	agg Arg	atc Ile 405	tca Ser	tca Ser	ctg Leu	cgc Arg	ccc Pro 410	cag Gln	ggc	ctc Leu	agc Ser	1431
aac Asn 415	ccc Pro	tcc Ser	acc Thr	ctc Leu	tct Ser 420	gct Ala	cag Gln	cca Pro	cag Gln	ctt Leu 425	tcc Ser	aga Arg	agc Ser	cac His	tcc Ser 430	1479
tcg Ser	ggc Gly	agc Ser	gtg Val	ctg Leu 435	ccc Pro	ctt Leu	ejà aaa	gag Glu	ctg Leu 440	gag Glu	Gly ggc	agg Arg	agg ·Arg	agc Ser 445	acc Thr	1527
agg Arg	gat Asp	cgg Arg	agg Arg 450	agc Ser	ccc Pro	gca Ala	gag Glu	cca Pro 455	gaa Glu	gga Gly	gga Gly	cca Pro	gca Ala 460	agt Ser	gaa Glu	1575
gly aaa	gca Ala	gcc Ala 465	agg Arg	ccc Pro	ctg Leu	ccc Pro	cgt Arg 470	ttt Phe	aac Asn	tcc Ser	gtt Val	cct Pro 475	ttg Leu	act Thr	gac Asp	1623
aca Thr	ggc Gly 480	cat His	gag Glu	agg Arg	cag Gln	tcc Ser 485	gag Glu	gga Gly	tcc Ser	tcc Ser	agc Ser 490	ccg Pro	cag Gln	ctc Leu	cag Gln	1671
gag Glu 495	tct Ser	gtc Val	ttc Phe	cac His	ctg Leu 500	ctg Leu	gtg Val	ccc Pro	agt Ser	gtc Val 505	atc Ile	ctg Leu	gtc Val	ttg Leu	ctg Leu 510	1719
gcc Ala	gtc Val	gga Gly	ggc Gly	ctc Leu 515	ttg Leu	ttc Phe	tac Tyr	agg Arg	tgg Trp 520	agg Arg	cgg Arg	cgg Arg	agc Ser	cat His 525	caa Gln	1767
gag Glu	cct Pro	cag Gln	aga Arg 530	gcg Ala	gat Asp	tct Ser	ccc Pro	ttg Leu 535	gag Glu	caa Gln	cca Pro	gag Glu	ggc Gly 540	agc Ser	ccc Pro	1815
ctg Leu	act Thr	cag Gln 545	gat Asp	gac Asp	aga Arg	Gln	gtg Val 550	gaa Glu	ctg Leu	cca Pro	gtg Val	tag	aggg	gaatt	ct	1864
aagc	tgga	cg c	acag	aaca	g to	tctc	cgtg	gga	ggag	aca	ttat	<b>9</b> 999	ıcg t	ccac	cacca	1924
cccc	tccc	tg g	ccat	cctc	c tg	gaat	gtgg	tct	gccc	tcc	acca	gago	tc c	tgcc	tgcca	1984
ggac	tgga	.cc a	gagc	agco	a gg	ctgg	ggcc	cct	ctgt	ctc	aacc	cgca	ga c	cctt	gactg	2044
aatg	agag	ag g	ccag	agga	t gc	tccc	catg	ctg	ccac	tat	ttat	tgtg	ag c	cctg	gaggc	2104





tcccatgtgc	ttgaggaagg	ctggtgagcc	cggctcagga	ccctcttccc	tcaggggctg	2164
caccctcctc	tcactccctt	ccatgccgga	acccaggcca	gggacccacc	ggcctgtggt	2224
ttgtgggaaa	gcagggtgga	cgctgaggag	tgaaagaacc	ctgcacccag	agggcctgcc	2284
tggtgccaag	gtatcccagc	ctggacaggc	atggacctgt	ctccagagag	aggagcctga	2344
agttcgtggg	gcgggacagc	gtcggcctga	tttcccgtaa	aggtgtgcag	cctgagagac	2404
gggaagagga	ggcctctgga	cctgctggtc	tgcactgaca	gcctgaaggg	tctacaccct	2464
cggctcacct	aagtgccctg	tgctggttgc	caggcgcaga	ggggaggcca	gccctgccct	2524
caggacctgc	ctgacctgcc	agtgatgcca	agagggggat	caagcactgg	cctctgcccc	2584
tcctccttcc	agcacctgcc	agagcttctc	caggaggcca	agcagaggct	cccctcatga	2644
aggaagccat	tgcactgtga	acactgtacc	tgcctgctga	acagcctgcc	cccgtccatc	2704
catgagccag	catccgtccg	tcctccactc	tccagcctct	cccca		2749

<210> 4

<211> 554

<212> PRT

<213> Homo sapiens

<400> 4

Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu 1 10 15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr 20 25 30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu 35 40 45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln 50 55 60

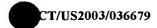
Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys 65 70 75 80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr 85 90 95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu 100 105 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu 115





- Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln 130 135 140
- Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu 145 150 155 160
- Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala 165 170 175
- Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu 180 185 190
- Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His 195 200 205
- Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu 210 215 220
- Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro 225 230 235 240
- Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser 245 250 255
- Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser 260 265 270
- Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn 275 280 285
- Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val 290 295 300
- Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly 305 310 315 320
- Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu 325 330 335
- Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala 340 345 350
- Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly Thr Ala Leu Pro 355 360 365
- Arg Val Gly Pro Val Arg Pro Thr Gly Gln Asp Trp Asn His Thr Pro 370 380





Gln Lys Thr Asp His Pro Ser Ala Leu Leu Arg Asp Pro Pro Glu Pro 385 390

Gly Ser Pro Arg Ile Ser Ser Leu Arg Pro Gln Gly Leu Ser Asn Pro 410

Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly 425

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala

Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr Gly 470

His Glu Arg Gln Ser Glu Gly Ser Ser Pro Gln Leu Gln Glu Ser 490

Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val 500 505

Glý Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro 515 520

Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr 530 535 540

Gln Asp Asp Arg Gln Val Glu Leu Pro Val

<210> 5

<211> 1519 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (190)..(1506)

<220>

<221> sig\_peptide

<222> (190)..(285)

<220>

<221> mat\_peptide

<222> (28<del>6</del>)..(1503)

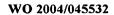
<400> 5

gagggctggc cagtgaggct cggcccgggg aaagtgaaag tttgcctggg tcctctcggc





gecagageeg etetee	gcat cccaggacag c	ggtgeggee eteggeegge	g gcgcccactc 120
cgcagcagcc agcgage	cgag cgagcgagcg ag	gggeggeeg aegegeeegg	g ccgggaccca 180
gctgcccgt atg acc Met Thr 1	gcg ccg ggc gcc g Ala Pro Gly Ala A	gcc ggg cgc tgc cct Ala Gly Arg Cys Pro 10	ccc acg aca 231 Pro Thr Thr
tgg ctg ggc tcc c	tg ctg ttg ttg gto	c tgt ctc ctg gcg ac	gc agg agt 279
Trp Leu Gly Ser Le	eu Leu Leu Leu Vai	l Cys Leu Leu Ala Se	er Arg Ser
15	20	25	30
atc acc gag gag gi	al Ser Glu Tyr Cys	agc cac atg att gg	gg agt gga 327
Ile Thr Glu Glu Va		Ser His Met Ile Gl	.y Ser Gly
3!		40	45
cac ctg cag tct co	tg cag cgg ctg att	gac agt cag atg ga	u Thr Ser
His Leu Gln Ser Lo	eu Gln Arg Leu Ile	Asp Ser Gln Met Gl	
50	55	60	
tgc caa att aca te Cys Gln Ile Thr Pl 65	tt gag ttt gta gad he Glu Phe Val Asp 70	c cag gaa cag ttg aa o Gln Glu Gln Leu Ly 75	a gat cca 423 rs Asp Pro
gtg tgc tac ctt ac Val Cys Tyr Leu Ly 80	ag aag gca ttt cto ys Lys Ala Phe Leo 85	c ctg gta caa gac at 1 Leu Val Gln Asp Il 90	a atg gag 471 e Met Glu
gac acc atg cgc to	tc aga gat aac acc	c ccc aat gcc atc gc	cc att gtg 519
Asp Thr Met Arg Pl	he Arg Asp Asn Thi	Pro Asn Ala Ile Al	.a Ile Val
95	100	105	110
Gln Leu Gln Glu Le	tc tct ttg agg ctg	g aag agc tgc ttc ac	c aag gat ' 567
	eu Ser Leu Arg Leu	1 Lys Ser Cys Phe Th	ir Lys Asp
	15	120	125
tat gaa gag cat ga	ac aag gcc tgc gtc	c cga act ttc tat ga	u Thr Pro
Tyr Glu Glu His Aa	sp Lys Ala Cys Va	L Arg Thr Phe Tyr Gl	
130	. 139	5	
ctc cag ttg ctg ga Leu Gln Leu Leu G 145	ag aag gtc aag aat lu Lys Val Lys Ası 150	gtc ttt aat gaa ac Nal Phe Asn Glu Th 155	a aag aat 663 ir Lys Asn
ctc ctt gac aag ga Leu Leu Asp Lys Aa 160	ac tgg aat att tto sp Trp Asn Ile Pho 165	e agc aag aac tgc aa e Ser Lys Asn Cys As 170	nc aac agc 711 nn Asn Ser
ttt gct gaa tgc to	cc agc caa gat gto	g gtg acc aag cct ga	at tgc aac 759
Phe Ala Glu Cys So	er Ser Gln Asp Val	Val Thr Lys Pro As	p Cys Asn
175	180	185	190
Cys Leu Tyr Pro Ly	aa gcc atc cct ago	e agt gac ccg gcc to	et gtc tcc 807
	ys Ala Ile Pro Sei	Ser Asp Pro Ala Se	er Val Ser
	95	200	205
cct cat cag ccc cf	tc gcc ccc tcc atg	g gcc cet gtg gct gg	y Leu Thr
Pro His Gln Pro Le	eu Ala Pro Ser Met	: Ala Pro Val Ala Gl	
210	215	5 22	
tgg gag gac tct ga Trp Glu Asp Ser G 225	ag gga act gag ggo lu Gly Thr Glu Gly 230	e age tee ete ttg ee 7 Ser Ser Leu Leu Pr 235	et ggt gag 903 o Gly Glu







														_			
cag Gln	ccc Pro 240	ctg Leu	cac His	aca Thr	gtg Val	gat Asp 245	cca Pro	ggc Gly	agt Ser	gcc Ala	aag Lys 250	cag Gln	cgg Arg	cca Pro	ccc Pro		951
agg Arg 255	agc Ser	acc Thr	tgc Cys	cag Gln	agc Ser 260	ttt Phe	gag Glu	ccg Pro	cca Pro	gag Glu 265	acc Thr	cca Pro	gtt Val	gtc Val	aag Lys 270		999
								cag Gln									1047
ttc Phe	aac Asn	ccc Pro	999 999 999	atg Met	gag Glu	gat Asp	att Ile	ctt Leu 295	gac Asp	tct Ser	gca Ala	atg Met	ggc 300	act Thr	aat Asn		<b>1095</b>
tgg Trp	gtc Val	cca Pro 305	gaa Glu	gaa Glu	gcc Ala	tct Ser	gga Gly 310	gag Glu	gcc Ala	agt Ser	gag Glu	att Ile 315	ccc Pro	gta Val	ccc Pro		1143
caa Gln	999 Gly 320	aca Thr	gag Glu	ctt Leu	tcc Ser	ccc Pro 325	tcc Ser	agg Arg	cca Pro	gga Gly	330 GJA aaa	ggc Gly	agc Ser	atg Met	cag Gln		1191
aca Thr 335	gag Glu	ccc Pro	gcc Ala	aga Arg	ccc Pro 340	agc Ser	aac Asn	ttc Phe	ctc Leu	tca Ser 345	gca Ala	tct Ser	tct Ser	cca Pro	ctc Leu 350	•	1239
cct Pro	gca Ala	tca Ser	gca Ala	aag Lys 355	ggc	caa Gln	cag Gln	ccg Pro	gca Ala 360	gat Asp	gta Val	act Thr	ggc	cat His 365	gag Glu		1287
agg Arg	cag Gln	tcc Ser	gag Glu 370	gga Gly	tcc Ser	tcc Ser	agc Ser	ccg Pro 375	cag Gln	ctc Leu	cag Gln	gag Glu	tct Ser 380	gtc Val	ttc Phe		1335
cac His	ctg Leu	ctg Leu 385	gtg Val	ccc Pro	agt Ser	gtc Val	atc Ile 390	ctg Leu	gtc Val	ttg Leu	ctg Leu	gcc Ala 395	gtc Val	gga Gly	ggc Gly		1383
								cgg Arg									1431
gcg Ala 415	gat Asp	tct Ser	ccc Pro	ttg Leu	gag Glu 420	caa Gln	cca Pro	gag Glu	ggc	agc Ser 425	ccc Pro	ctg Leu	act Thr	cag Gln	gat Asp 430		1479
gac Asp	aga Arg	cag Gln	gtg Val	gaa Glu 435	ctg Leu	cca Pro	gtg Val	tag	aggg	gaati	ict a	aag					1519

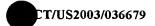
<210> 6 <211> 438 <212> PRT

<213> Homo sapiens

<400> 6

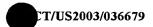
Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu 1 10 15





- Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr 20 25 30
- Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu 35 40 45
- Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln 50 55 60.
- Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys 65 70 75 80
- Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr 85 90 95
- Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu 100 105 110
- Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu 115 120 125
- Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln 130 135 140
- Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu 145 150 155 160
- Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala 165 170 175
- Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu 180 185 190
- Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His 195 200 205
- Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu 210 215 220 .
- Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro 225 230 235 240
- Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser 245 250 255
- Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser 260 265 270





Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn 280

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val 295

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala 340

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly His Glu Arg Gln 355

Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val Phe His Leu 370 375

Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly Gly Leu Leu 385 390

Phe Tyr Arg Trp Arg Arg Ser His Gln Glu Pro Gln Arg Ala Asp 405

Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln Asp Asp Arg . 420

Gln Val Glu Leu Pro Val 435

<210> 7

<211> 3985 <212> DNA <213> Homo sapiens

<220>

<221> CDS

<222> (293)..(3211)

<220> •

<221> sig\_peptide <222> (293)..(349)

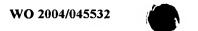
<220>

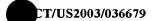
<221> mat\_peptide

<222> (350)..(3208)

<220>

<221> misc feature





<22 <22			)( nogl	598) obul	in											
<22 <22 <22 <22	1> 2>	(917	<del>)</del> (	ture 1177 obul	)											
<22 <22 <22 <22	1> 2>	(251	<del>6</del> )	ture (302 Kin	2)	Cat	alyt	ic D	omai	n						
<40 gaa		7 aga	caga	gtgt	cc a	aaag	cgtg	a ga	gcac	qaaq	tga	qqaq	aaq	ataa	agaaga	60
															aaaagg	120
gga	agaa	gag	gatc	agcc	ca a	ggag	gagg	a ag	agga	aaac	aag	acaa	aca	gcca	gtgcag	180
agg	agag	gaa	cgtg	tgtc	ca g	tgtc	ccga	t cc	ctgc	ggag	cta	gtag	ctg	agag	ctctgt	240
gcc	ctgg	gca	cctt	gcag	cc c	tgca	cctg	c ct	gcca	cttc	ccc	accg	agg		tg ggc et Gly	298
cca Pro	gga Gly	gtt Val 5	ctg Leu	ctg Leu	ctc Leu	ctg Leu	ctg Leu 10	gtg Val	gcc Ala	aca Thr	gct Ala	tgg Trp 15	cat His	ggt Gly	cag Gln	346
gga Gly	atc Ile 20	cca Pro	gtg Val	ata Ile	gag Glu	ccc Pro 25	agt Ser	gtc Val	cct Pro	gag Glu	ctg Leu 30	gtc Val	gtg Val	aag Lys	cca Pro	394
gga Gly 35	gca Ala	acg Thr	gtg Val	acc Thr	ttg Leu 40	cga Arg	tgt Cys	gtg Val	ggc Gly	aat Asn 45	ggc	agc Ser	gtg Val	gaa Glu	tgg Trp 50	442
gat Asp	ggc Gly	ccc Pro	cca Pro	tca Ser 55	cct Pro	cac His	tgg Trp	acc Thr	ctg Leu 60	tac Tyr	tct Ser	gat Asp	ggc Gly	tcc Ser 65	agc Ser	490
agc Ser	atc Ile	ctc Leu	agc Ser 70	acc Thr	aac Asn	aac Asn	gct Ala	acc Thr 75	ttc Phe	caa Gln	aac Asn	acg Thr	80 GJA 333	acc Thr	tat Tyr	538
cgc Arg	tgc Cys	act Thr 85	gag Glu	cct Pro	gga Gly	gac Asp	ccc Pro 90	ctg Leu	gga Gly	ggc	agc Ser	gcc Ala 95	gcc Ala	atc Ile	cac His	586
ctc Leu	tat Tyr 100	gtc Val	aaa Lys	gac Asp	cct Pro	gcc Ala 105	cgg Arg	ccc Pro	tgg Trp	aac Asn	gtg Val 110	cta Leu	gca Ala	cag Gln	gag Glu	634
gtg Val 115	gtc Val	gtg Val	ttc Phe	gag Glu	gac Asp 120	cag Gln	gac Asp	gca Ala	cta Leu	ctg Leu 125	ccc Pro	tgt Cys	ctg Leu	ctc Leu	aca Thr 130	682
gac Asp	ccg Pro	gtg Val	ctg Leu	gaa Glu 135	gca Ala	ggc ggc	gtc Val	tcg Ser	ctg Leu 140	gtg Val	cgt Arg	gtg Val	cgt Arg	ggc Gly 145	cgg Arg	730

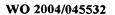




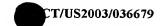
ccc ctc atg Pro Leu Met	cgc cac ac Arg His Th	Asn Tyr Se	cc ttc tcg er Phe Ser 55	ccc tgg cat Pro Trp His 160	ggc ttc Gly Phe	778
acc atc cac Thr Ile His 165	Arg Ala Ly	ttc att ca Phe Ile Gl 170	ag agc cag ln Ser Gln	gac tat caa Asp Tyr Gln 175	tgc agt Cys Ser	826
gcc ctg atg Ala Leu Met . 180	ggt ggc agg Gly Gly Ar	g aag gtg at g Lys Val Me 185	et Ser Ile	agc atc cgg Ser Ile Arg 190	ctg aaa Leu Lys	874
gtg cag aaa Val Gln Lys 195	gtc atc cc Val Ile Pro 20	Gly Pro Pr	ca gcc ttg ro Ala Leu 205	aca ctg gtg Thr Leu Val	cct gca Pro Ala 210	922
gag ctg gtg Glu Leu Val	cgg att cg Arg Ile Arg 215	a ggg gag go g Gly Glu Al	ct gcc cag la Ala Gln 220	atc gtg tgc Ile Val Cys	tca gcc Ser Ala 225	970
agc agc gtt Ser Ser Val	gat gtt aa Asp Val As: 230	ttt gat gt Phe Asp Va 23	al Phe Leu	caa cac aac Gln His Asn 240	aac acc Asn Thr	1018
aag ctc gca Lys Leu Ala 245	Ile Pro Gl	a caa tct ga n Gln Ser As 250	ac ttt cat sp Phe His	aat aac cgt Asn Asn Arg 255	tac caa Tyr Gln	1066
aaa gtc ctg Lys Val Leu 260	acc ctc aa Thr Leu As	c ctc gat ca Leu Asp Gl 265	ln Val Asp	ttc caa cat Phe Gln His 270	gcc ggc Ala Gly	1114
aac tac tcc Asn Tyr Ser 275	tgc gtg gc Cys Val Ala 28	a Ser Asn Va	tg cag ggc al Gln Gly 285	aag cac tcc Lys His Ser	acc tcc Thr Ser 290	1162
atg ttc ttc Met Phe Phe	cgg gtg gt Arg Val Val 295	a gag agt go L Glu Ser Al	cc tac ttg la Tyr Leu 300	aac ttg agc Asn Leu Ser	tct gag Ser Glu 305	1210
cag aac ctc Gln Asn Leu	atc cag gag Ile Gln Gli 310	g gtg acc gt 1 Val Thr Va 31	al Gly Glu	ggg ctc aac Gly Leu Asn 320	ctc aaa Leu Lys	1258
gtc atg gtg Val Met Val 325	gag gcc tad Glu Ala Ty	c cca ggc ct Pro Gly Le 330	tg caa ggt eu Gln Gly	ttt aac tgg Phe Asn Trp 335	acc tac Thr Tyr	1306
ctg gga ccc Leu Gly Pro 340	ttt tct gad Phe Ser Asj	c cac cag cc His Gln Pr 345	ro Glu Pro	aag ctt gct Lys Leu Ala 350	aat gct Asn Ala	1354
acc acc aag Thr Thr Lys 355	gac aca tad Asp Thr Tyr 360	Arg His Th	cc ttc acc nr Phe Thr 1 365	ctc tct ctg Leu Ser Leu	ccc cgc Pro Arg 370	1402
ctg aag ccc Leu Lys Pro	tct gag gct Ser Glu Ala 375	ggc cgc ta Gly Arg Ty	ac tcc ttc yr Ser Phe 3 380	ctg gcc aga Leu Ala Arg	aac cca Asn Pro 385	1450
gga ggc tgg Gly Gly Trp	aga gct cto Arg Ala Leo 390	g acg ttt ga n Thr Phe Gl 39	lu Leu Thr	ctt cga tac Leu Arg Tyr 400	ccc cca Pro Pro	1498

gag Glu	gta Val	agc Ser 405	gtc Val	ata Ile	tgg Trp	aca Thr	ttc Phe 410	atc Ile	aac Asn	ggc	tct Ser	ggc Gly 415	acc Thr	ctt Leu	ttg Leu	1546
tgt Cys	gct Ala 420	gcc Ala	tct Ser	Gly 999	tac Tyr	ccc Pro 425	cag Gln	ccc Pro	aac Asn	gtg Val	aca Thr 430	tgg Trp	ctg Leu	cag Gln	tgc Cys	1594
agt Ser 435	ggc	cac His	act Thr	gat Asp	agg Arg 440	tgt Cys	gat Asp	gag Glu	gcc Ala	caa Gln 445	gtg Val	ctg Leu	cag Gln	gtc Val	tgg Trp 450	1642
gat Asp	gac Asp	cca Pro	tac Tyr	cct Pro 455	gag Glu	gtc Val	ctg Leu	agc Ser	cag Gln 460	gag Glu	ccc Pro	ttc Phe	cac His	aag Lys 465	gtg Val	1690
acg Thr	gtg Val	cag Gln	agc Ser 470	ctg Leu	ctg Leu	act Thr	gtt Val	gag Glu 475	acc Thr	tta Leu	gag Glu	cac His	aac Asn 480	caa Gln	acc Thr	1738
tac Tyr	gag Glu	tgc Cys 485	agg Arg	gcc Ala	cac His	aac Asn	agc Ser 490	gtg Val	Gly 999	agt Ser	ggc	tcc Ser 495	tgg Trp	gcc Ala	ttc Phe	1786
ata Ile	ccc Pro 500	atc Ile	tct Ser	gca Ala	gga Gly	gcc Ala 505	cac His	acg Thr	cat His	ccc Pro	ccg Pro 510	gat Asp	gag Glu	ttc Phe	ctc Leu	1834
ttc Phe 515	aca Thr	cca Pro	gtg Val	gtg Val	gtc Val 520	gcc Ala	tgc Cys	atg Met	tcc Ser	atc Ile 525	atg Met	gcc Ala	ttg Leu	ctg Leu	ctg Leu 530	1882
ctg Leu '	ctg Leu	ctc Leu	ctg Leu	ctg Leu 535	cta Leu	ttg Leu	tac Tyr	aag Lys	tat Tyr 540	aag Lys	cag Gln	aag Lys	ccc Pro	aag Lys 545	tac Tyr	1930
cag Gln	gtc Val	cgc Arg	tgg Trp 550	aag Lys	atc Ile	atc Ile	gag Glu	agc Ser 555	tat Tyr	gag Glu	ggc Gly	aac Asn	agt Ser 560	tat Tyr	act Thr	1978
ttc Phe	atc Ile	gac Asp 565	ccc Pro	acg Thr	cag Gln	ctg Leu	cct Pro 570	tac Tyr	aac Asn	gag Glu	aag Lys	tgg Trp 575	gag Glu	ttc Phe	ccc Pro	2026
cgg Arg	aac Asn 580	aac Asn	ctg Leu	cag Gln	ttt Phe	ggt Gly 585	aag Lys	acc Thr	ctc Leu	gga Gly	gct Ala 590	gga Gly	gcc Ala	ttt Phe	gly aaa	2074
aag Lys 595	gtg Val	gtg Val	gag Glu	gcc Ala	acg Thr 600	gcc Ala	ttt Phe	ggt Gly	ctg Leu	ggc Gly 605	aag Lys	gag Glu	gat Asp	gct Ala	gtc Val 610	2122
ctg Leu	aag Lys	gtg Val	gct Ala	gtg Val 615	aag Lys	atg Met	ctg Leu	aag Lys	tcc Ser 620	acg Thr	gcc Ala	cat His	gct Ala	gat Asp 625	gag Glu	2170
aag Lys	gag Glu	gcc Ala	ctc Leu 630	atg Met	tcc Ser	gag Glu	ctg Leu	aag Lys 635	atc Ile	atg Met	agc Ser	cac His	ctg Leu 640	ggc Gly	cag Gln	2218
cac His	gag Glu	aac Asn 645	atc Ile	gtc Val	aac Asn	ctt Leu	ctg Leu 650	gga Gly	gcc Ala	tgt Cys	acc Thr	cat His 655	gga Gly	ggc Gly	cct Pro	2266

gta Val	ctg Leu 660	. vaı	atc Ile	acg Thr	gag Glu	tac Tyr 665	tgt Cys	tgc Cys	tat Tyr	ggc	gac Asp 670	Leu	cto Lev	aac Asn	ttt Phe	2314
ctg Leu 675	Arg	agg Arg	aag Lys	gct Ala	gag Glu 680	Ala	atg Met	ctg Leu	gga Gly	ccc Pro 685	Ser	ctg Leu	ago Ser	ccc	Gly ggc	2362
cag Gln	gac Asp	ccc	gag Glu	gga Gly 695	GTA	gtc Val	gac Asp	tat Tyr	aag Lys 700	aac Asn	atc Ile	cac His	ctc Leu	gag Glu 705	aag Lys	2410
aaa Lys	tat Tyr	gtc Val	cgc Arg 710	agg Arg	gac Asp	agt Ser	ggc Gly	ttc Phe 715	tcc Ser	agc Ser	cag Gln	ggt Gly	gtg Val 720	gac Asp	acc Thr	2458
tat Tyr	gtg Val	gag Glu 725	atg Met	agg Arg	cct Pro	gtc Val	tcc Ser 730	act Thr	tct Ser	tca Ser	aat Asn	gac Asp 735	tcc Ser	ttc Phe	tct Ser	2506
gag Glu	caa Gln 740	gac Asp	ctg Leu	gac Asp	aag Lys	gag Glu 745	gat Asp	gga Gly	cgg Arg	ccc Pro	ctg Leu 750	gag Glu	ctc Leu	cgg Arg	gac Asp	2554
ctg Leu 755	ctt Leu	cac His	ttc Phe	tcc Ser	agc Ser 760	caa Gln	gta Val	gcc Ala	cag Gln	ggc Gly 765	atg Met	gcc Ala	ttc Phe	ctc Leu	gct Ala 770	2602
tcc Ser	aag Lys	aat Asn	tgc Cys	atc Ile 775	cac His	cgg Arg	gac Asp	gtg Val	gca Ala 780	gcg Ala	cgt Arg	aac Asn	gtg Val	ctg Leu 785	ttg Leu	2650
acc Thr	aat Asn	ggt Gly	cat His 790	gtg Val	gcc Ala	aag Lys	att Ile	999 Gly 795	gac Asp	ttc Phe	ej gaa	ctg Leu	gct Ala 800	agg Arg	gac Asp	2698
atc Ile	atg Met	aat Asn 805	gac Asp	tcc Ser	aac Asn	tac Tyr	att Ile 810	gtc Val	aag Lys	ggc	aat Asn	gcc Ala 815	cgc Arg	ctg Leu	cct Pro	2746
gtg Val	aag Lys 820	tgg Trp	atg Met	gcc Ala	cca Pro	gag Glu 825	agc Ser	atc Ile	ttt Phe	gac Asp	tgt Cys 830	gtc Val	tac Tyr	acg Thr	gtt Val	2794
cag Gln 835	agc Ser	gac Asp	gtc Val	tgg Trp	tcc Ser 840	tat Tyr	ggc Gly	atc Ile	ctc Leu	ctc Leu 845	tgg Trp	gag Glu	atc Ile	ttc Phe	tca Ser 850	2842
ctt Leu	61y 999	ctg Leu	aat Asn	ccc Pro 855	tac Tyr	cct Pro	ggc Gly	atc Ile	ctg Leu 860	gtg Val	aac Asn	agc Ser	aag Lys	ttc Phe 865	tat Tyr	2890
aaa Lys	ctg Leu	gtg Val	aag Lys 870	gat Asp	gga Gly	tac Tyr	Gln	atg Met 875	gcc Ala	cag Gln	cct Pro	gca Ala	ttt Phe 880	gcc Ala	cca Pro	2938
aag Lys	aat Asn	ata Ile 885	tac Tyr	agc Ser	atc Ile	met	cag Gln 890	gcc Ala	tgc Cys	tgg Trp	gcc Ala	ttg Leu 895	gag Glu	ccc Pro	acc Thr	2986
cac His	aga Arg 900	ccc Pro	acc Thr	ttc Phe	cag Gln	cag Gln 905	atc Ile	tgc Cys	tcc Ser	ttc Phe	ctt Leu 910	cag Gln	gag Glu	cag Gln	gcc Ala	3034







caa gag gac agg aga gag cgg gac tat acc aat ctg ccg agc agc agc Gln Glu Asp Arg Glu Arg Asp Tyr Thr Asn Leu Pro Ser Ser Ser 915 920 925 930	3082
aga agc ggt ggc agc ggc agc agc agt gag ctg gag gag gag agc Arg Ser Gly Gly Ser Ser Ser Ser Glu Leu Glu Glu Ser 935 940 945	3130
tct agt gag cac ctg acc tgc tgc gag caa ggg gat atc gcc cag ccc Ser Ser Glu His Leu Thr Cys Cys Glu Gln Gly Asp Ile Ala Gln Pro 950 955 960	3178
ttg ctg cag ccc aac aac tat cag ttc tgc tga ggagttgacg acagggagta Leu Leu Gln Pro Asn Asn Tyr Gln Phe Cys 965 970	3231
ccactetece etectecaaa etteaaetee teeatggatg gggegacaeg gggagaacat	3291
acaaactctg ccttcggtca tttcactcaa cagctcggcc cagctctgaa acttgggaag	3351
gtgagggatt caggggaggt cagaggatcc cacttcctga gcatgggcca tcactgccag	3411
tcaggggctg ggggctgage cetcacecec ceetceeeta etgtteteat ggtgttggee	3471
tegtgtttge tatgecaact agtagaacet tettteetaa teeeettate tteatggaaa	3531
tggactgact ttatgcctat gaagtcccca ggagctacac tgatactgag aaaaccaggc	3591
tetttgggge tagacagaet ggcagagagt gagateteee tetetgagag gagcagcaga	3651
tgctcacaga ccacactcag ctcaggcccc ttggagcagg atggctcctc taagaatctc	3711
acaggacete ttagtetetg cectataege egeetteact ecacageete acceetecea	3771
ccccatact ggtactgctg taatgagcca agtggcagct aaaagttggg ggtgttctgc	3831
ccagtcccgt cattctgggc tagaaggcag gggaccttgg catgtggctg gccacaccaa	3891
gcaggaagca caaactcccc caagctgact catcctaact aacagtcacg ccgtgggatg	3951·
tetetgteca cattaaacta acagcattaa tgca	3985

<210> 8 <211> 972 <212> PRT <213> Homo sapiens

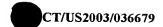
<400> 8

Met Gly Pro Gly Val Leu Leu Leu Leu Leu Val Ala Thr Ala Trp His 1 5 10 15

Gly Gln Gly Ile Pro Val Ile Glu Pro Ser Val Pro Glu Leu Val Val 20 25

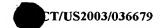
Lys Pro Gly Ala Thr Val Thr Leu Arg Cys Val Gly Asn Gly Ser Val 35 40





- Glu Trp Asp Gly Pro Pro Ser Pro His Trp Thr Leu Tyr Ser Asp Gly 50 55 60
- Ser Ser Ser Ile Leu Ser Thr Asn Asn Ala Thr Phe Gln Asn Thr Gly 65 70 75 80
- Thr Tyr Arg Cys Thr Glu Pro Gly Asp Pro Leu Gly Gly Ser Ala Ala 85 90 95
- Ile His Leu Tyr Val Lys Asp Pro Ala Arg Pro Trp Asn Val Leu Ala 100 105 110
- Gln Glu Val Val Val Phe Glu Asp Gln Asp Ala Leu Leu Pro Cys Leu 115 120 125
- Leu Thr Asp Pro Val Leu Glu Ala Gly Val Ser Leu Val Arg Val Arg 130 135 140
- Gly Arg Pro Leu Met Arg His Thr Asn Tyr Ser Phe Ser Pro Trp His 145 150 155 160
- Gly Phe Thr Ile His Arg Ala Lys Phe Ile Gln Ser Gln Asp Tyr Gln 165 170 175
- Cys Ser Ala Leu Met Gly Gly Arg Lys Val Met Ser Ile Ser Ile Arg 180 185 190
- Leu Lys Val Gln Lys Val Ile Pro Gly Pro Pro Ala Leu Thr Leu Val 195 200 205
- Pro Ala Glu Leu Val Arg Ile Arg Gly Glu Ala Ala Gln Ile Val Cys 210 220
- Ser Ala Ser Ser Val Asp Val Asn Phe Asp Val Phe Leu Gln His Asn 225 230 235 240
- Asn Thr Lys Leu Ala Ile Pro Gln Gln Ser Asp Phe His Asn Asn Arg 245 250 255
- Tyr Gln Lys Val Leu Thr Leu Asn Leu Asp Gln Val Asp Phe Gln His 260 265 270
- Ala Gly Asn Tyr Ser Cys Val Ala Ser Asn Val Gln Gly Lys His Ser 275 280 285
- Thr Ser Met Phe Phe Arg Val Val Glu Ser Ala Tyr Leu Asn Leu Ser 290 295 300





Ser Glu Gln Asn Leu Ile Gln Glu Val Thr Val Gly Glu Gly Leu Asn 305 310 315 320

Leu Lys Val Met Val Glu Ala Tyr Pro Gly Leu Gln Gly Phe Asn Trp 325 330 335

Thr Tyr Leu Gly Pro Phe Ser Asp His Gln Pro Glu Pro Lys Leu Ala 340 345 350

Asn Ala Thr Thr Lys Asp Thr Tyr Arg His Thr Phe Thr Leu Ser Leu 355 360 365

Pro Arg Leu Lys Pro Ser Glu Ala Gly Arg Tyr Ser Phe Leu Ala Arg 370. 375 380

Asn Pro Gly Gly Trp Arg Ala Leu Thr Phe Glu Leu Thr Leu Arg Tyr 385 390 395 400

Pro Pro Glu Val Ser Val Ile Trp Thr Phe Ile Asn Gly Ser Gly Thr 405 410 415

Leu Leu Cys Ala Ala Ser Gly Tyr Pro Gln Pro Asn Val Thr Trp Leu 420 425 430

Gln. Cys Ser Gly His Thr Asp Arg Cys Asp Glu Ala Gln Val Leu Gln
435 440 445

Val Trp Asp Asp Pro Tyr Pro Glu Val Leu Ser Gln Glu Pro Phe His 450 455 460

Lys Val Thr Val Gln Ser Leu Leu Thr Val Glu Thr Leu Glu His Asn 465 470 475 480

Gln Thr Tyr Glu Cys Arg Ala His Asn Ser Val Gly Ser Gly Ser Trp 485 490 495

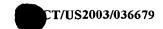
Ala Phe Ile Pro Ile Ser Ala Gly Ala His Thr His Pro Pro Asp Glu 500 505 510

Phe Leu Phe Thr Pro Val Val Val Ala Cys Met Ser Ile Met Ala Leu 515 520 525

Leu Leu Leu Leu Leu Leu Leu Leu Tyr Lys Tyr Lys Gln Lys Pro 530 540

Lys Tyr Gln Val Arg Trp Lys Ile Ile Glu Ser Tyr Glu Gly Asn Ser 545 550 . 555 560





Tyr Thr Phe Ile Asp Pro Thr Gln Leu Pro Tyr Asn Glu Lys Trp Glu 565 570 575

Phe Pro Arg Asn Asn Leu Gln Phe Gly Lys Thr Leu Gly Ala Gly Ala 580 585 590

Phe Gly Lys Val Val Glu Ala Thr Ala Phe Gly Leu Gly Lys Glu Asp 595 600 . 605

Ala Val Leu Lys Val Ala Val Lys Met Leu Lys Ser Thr Ala His Ala 610 620

Asp Glu Lys Glu Ala Leu Met Ser Glu Leu Lys Ile Met Ser His Leu 625 630 635 640

Gly Gln His Glu Asn Ile Val Asn Leu Leu Gly Ala Cys Thr His Gly 645 650 655

Gly Pro Val Leu Val Ile Thr Glu Tyr Cys Cys Tyr Gly Asp Leu Leu 660 665 670

Asn Phe Leu Arg Arg Lys Ala Glu Ala Met Leu Gly Pro Ser Leu Ser 675 680 685

Pro Gly Gln Asp Pro Glu Gly Gly Val Asp Tyr Lys Asn Ile His Leu 690 695 700

Glu Lys Lys Tyr Val Arg Arg Asp Ser Gly Phe Ser Ser Gln Gly Val 705 710 715 720

Asp Thr Tyr Val Glu Met Arg Pro Val Ser Thr Ser Ser Asn Asp Ser 725 730 735

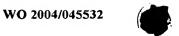
Phe Ser Glu Gln Asp Leu Asp Lys Glu Asp Gly Arg Pro Leu Glu Leu 740 745 750

Arg Asp Leu Leu His Phe Ser Ser Gln Val Ala Gln Gly Met Ala Phe 755 760 765

Leu Ala Ser Lys Asn Cys Ile His Arg Asp Val Ala Ala Arg Asn Val 770 775 780

Leu Leu Thr Asn Gly His Val Ala Lys Ile Gly Asp Phe Gly Leu Ala 785 790 795 800

Arg Asp Ile Met Asn Asp Ser Asn Tyr Ile Val Lys Gly Asn Ala Arg 805 810 815





Leu Pro Val Lys Trp Met Ala Pro Glu Ser Ile Phe Asp Cys Val Tyr 820 825 830

Thr Val Gİn Ser Asp Val Trp Ser Tyr Gly Ile Leu Leu Trp Glu Ile 835 840 845

Phe Ser Leu Gly Leu Asn Pro Tyr Pro Gly Ile Leu Val Asn Ser Lys 850 855

Phe Tyr Lys Leu Val Lys Asp Gly Tyr Gln Met Ala Gln Pro Ala Phe 865 870 875 880

Ala Pro Lys Asn Ile Tyr Ser Ile Met Gln Ala Cys Trp Ala Leu Glu 885 890 895

Pro Thr His Arg Pro Thr Phe Gln Gln Ile Cys Ser Phe Leu Gln Glu 900 905 910

Gln Ala Gln Glu Asp Arg Glu Arg Asp Tyr Thr Asn Leu Pro Ser 915 920 925

Ser Ser Arg Ser Gly Gly Ser Gly Ser Ser Ser Glu Leu Glu Glu 930 935 940

Glu Ser Ser Ser Glu His Leu Thr Cys Cys Glu Gln Gly Asp Ile Ala 945 950 955 960

Gln Pro Leu Gln Pro Asn Asn Tyr Gln Phe Cys 965 970